

What is claimed is:

1 1. A circuit board comprising: a dielectric substrate, a grounding surface
2 formed on at least one surface of the dielectric substrate, and transmission lines
3 formed on one surface of the dielectric substrate for transmitting electrical signals,
4 wherein at least a portion of each of the transmission lines is isolated from an upper
5 surface of the dielectric substrate to reduce an effective permittivity between the
6 transmission lines and the grounding surface and reduce dielectric loss.

1 2. The circuit board of claim 1, further comprising a plurality of supporters
2 for supporting the transmission lines, between the dielectric substrate and each of
3 the transmission lines in order to isolate the transmission lines a predetermined
4 interval apart from the upper surface of the dielectric substrate.

1 3. The circuit board of claim 2, further comprising a pad installed at least
2 one end of each of the transmission lines.

1 4. The circuit board of claim 1, further comprising a pad installed at least one
2 end of each of the transmission lines.

1 5. A circuit board comprising: a dielectric substrate, a grounding surface
2 formed on at least one surface of the dielectric substrate, and transmission lines
3 formed on one surface of the dielectric substrate for transmitting electrical signals,
4 wherein at least a portion of each of the transmission lines is isolated from the upper
5 surface of the dielectric substrate to reduce an effective permittivity between the
6 transmission lines and the grounding surface and reduce dielectric loss, and a cap
7 which covers the transmission lines, one end of the cap being grounded to the
8 grounding surface.

1 6. The circuit board of claim 5, further comprising a plurality of supporters
2 for supporting the transmission lines, between the dielectric substrate and each of
3 the transmission lines in order to isolate the transmission lines a predetermined
4 interval apart from the upper surface of the dielectric substrate.

1 7. The circuit board of claim 6, wherein an inside of the cap is in a
2 vacuum state.

1 8. The circuit board of claim 6, further comprising a pad installed at at
2 least one end of each of the transmission lines.

1 9. The circuit board of claim 7, wherein the transmission lines are
2 installed on one surface of the dielectric substrate, the grounding surface is formed
3 on an opposite surface of the dielectric substrate, and a conducting electrode is
4 installed, one end of which is connected to the cap and the other is grounded to the
5 grounding surface through the dielectric substrate so that the cap is grounded to the
6 grounding surface.

1 10. The circuit board of claim 5, wherein an inside of the cap is in a
2 vacuum state.

1 11. The circuit board of claim 5, further comprising a pad installed at at
2 least one end of each of the transmission lines.

1 12. A method of manufacturing a circuit board, comprising:
2 forming a sacrificial layer of a predetermined thickness on a dielectric
3 substrate;
4 forming supporter patterns and transmission lines patterns by patterning the
5 sacrificial layer, and forming supporters and transmission lines in the supporter
6 patterns and transmission line patterns;
7 removing the sacrificial layer so that the transmission lines are isolated from
8 an upper surface of the dielectric substrate; and
9 forming a grounding surface on at least one surface of the dielectric
10 substrate.

1 13. The method of claim 12, wherein forming the supporter patterns and
2 transmission line patterns and the supporters and transmission lines comprises:
3 forming supporter patterns by patterning the sacrificial layer;

4 forming supporters in the supporter patterns;
5 forming another sacrificial layer of the sacrificial layer to a predetermined
6 height;
7 forming transmission line patterns by patterning the other sacrificial layer; and
8 forming transmission lines in the transmission line patterns.

1 14. The method of claim 13, further comprising forming a cap for covering
2 the transmission lines, one end of the cap being grounded to the grounding surface.

1 15. The method of claim 14, wherein an inside of the cap is in a vacuum
2 state.

1 16. The method of claim 12, further comprising forming a cap for covering
2 the transmission lines, one end of the cap being grounded to the grounding surface.

1 17. A method of manufacturing a circuit board, comprising:
2 coating a dielectric substrate with a first polymer to a predetermined height,
3 depositing an adhesive layer and a seed layer on the first polymer, and patterning
4 the seed layer, thereby forming support corresponding regions, pad corresponding
5 regions and ground corresponding regions;
6 coating the patterned seed layer with a second polymer, and patterning and
7 plating the second polymer, thereby forming a metal layer for transmission lines;
8 anisotropically etching exposed portions of the first polymer after removing
9 the second polymer and etching the adhesive layer; and
10 forming supporters by isotropically etching a portion of the first polymer below
11 the metal layer for transmission lines.

1 18. The method of claim 17, wherein the seed layer is patterned so that
2 the support corresponding regions, the pad corresponding regions and the ground
3 corresponding regions are wider than the metal layer for transmission lines.

1 19. The method of claim 18, further comprising forming a cap for covering
2 the transmission lines, one end of the cap being grounded to the grounding surface.

1 20. The method of claim 19, wherein an inside of the cap is in a vacuum
2 state.

1 21. The method of claim 17, further comprising forming a cap for covering
2 the transmission lines, one end of the cap being grounded to the grounding surface.